

CLAIMS

What is claimed is:

1. A rotor blade assembly comprising:
a rotor blade defining a blade radius between an axis of rotation and a blade tip;
a trailing edge flap pivotally mounted to said rotor blade; and
a trailing edge servo flap linked to said trailing edge flap, said trailing edge servo flap selectively deflectable to deflect said trailing edge flap in response thereto.
2. The rotor blade assembly as recited in claim 1, wherein said trailing edge flap positions said rotor blade about a rotor blade pitch axis.
3. The rotor blade assembly as recited in claim 1, wherein said trailing edge servo flap deflects in a first direction to deflect said trailing edge flap in a direction opposite said first direction.
4. The rotor blade assembly as recited in claim 1, wherein said trailing edge servo flap deflects about a trailing edge servo flap pitch axis and said trailing edge flap deflects about a trailing edge flap pitch axis, said trailing edge servo flap pitch axis displaced chordwise from said trailing edge flap pitch axis.
5. The rotor blade assembly as recited in claim 4, further comprising a trailing edge servo flap arm which deflects about a trailing edge servo flap arm pitch axis, said trailing edge servo flap arm pitch axis defined along said trailing edge flap pitch axis.
6. The rotor blade assembly as recited in claim 5, further comprising an actuator mounted along said trailing edge servo flap arm to selectively deflect said trailing edge servo flap about said trailing edge servo flap pitch axis.

7. The rotor blade assembly as recited in claim 6, wherein said actuator is mounted within said trailing edge servo flap arm.

8. The rotor blade assembly as recited in claim 6, wherein said actuator comprises a “smart” material.

9. A rotor blade assembly comprising:
 - a rotor blade defining a blade radius between an axis of rotation and a blade tip;
 - a trailing edge flap deflectable about a trailing edge flap pitch axis relative said rotor blade; and
 - a trailing edge servo flap located radially outboard of said trailing edge flap and linked thereto, said trailing edge servo flap selectively deflectable about a trailing edge servo flap pitch axis to deflect said trailing edge flap about said trailing edge flap pitch axis in response thereto.
10. The rotor blade assembly as recited in claim 9, further comprising a trailing edge servo flap arm which deflects about a trailing edge servo flap arm pitch axis, said trailing edge servo flap arm pitch axis defined along said trailing edge flap pitch axis.
11. The rotor blade assembly as recited in claim 10, further comprising an actuator mounted along said trailing edge servo flap arm to selectively deflect said trailing edge servo flap about said trailing edge servo flap pitch axis.
12. The rotor blade assembly as recited in claim 11, wherein said actuator is mounted within said trailing edge servo flap arm.
13. The rotor blade assembly as recited in claim 11, wherein said actuator comprises a “smart” material.

14. A method of positioning a rotor blade about a rotor blade pitch axis comprising the steps of:

(1) Linking a trailing edge servo flap with a trailing edge flap, the trailing edge servo flap located radially outboard of the trailing edge flap; and

(2) Selectively deflecting the trailing edge servo flap about a trailing edge servo flap pitch axis in a first direction to deflect the trailing edge flap about a trailing edge flap pitch axis in a direction opposite the first direction in response thereto.

15. A method as recited in claim 14, wherein step (1) further comprises displacing the trailing edge servo flap chordwise from the trailing edge flap.

16. A method as recited in claim 14, further comprising the step of: locating the trailing edge servo flap upon a trailing edge servo flap arm which deflects about a trailing edge servo flap arm pitch axis, the trailing edge servo flap arm pitch axis defined along the trailing edge flap pitch axis.

17. A method as recited in claim 16, further comprising the step of: linking the trailing edge servo flap arm with the trailing edge servo flap in a fixed relation.